

## Near-Field Thermodynamics and Energy Harvesting

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We show that the maximum work that can be obtained from the thermal radiation emitted between two planar sources in the near-field regime is much larger than that corresponding to the blackbody limit [1]. This quantity as well as an upper bound for the efficiency of the process are computed from the formulation of thermodynamics in the near-field regime. The case when the difference of temperatures of the hot source and the environment is small—relevant for energy harvesting—is studied in detail. We also show that the thermal radiation energy conversion can be more efficient in the near-field regime [1]. These results open new possibilities for the design of energy converters that can be used to harvest energy from sources of moderate temperature at the nanoscale.

### References

[1] I. Latella, A. Pérez-Madrid, L. C. Lapas and J. M. Rubi, *J. Appl. Phys.* **115**, 124307 (2014)